

LISTING OF THE CLAIMS:

Claim 1 (Previously Presented): A film in a display device, having a high transmittance and matt property, comprising, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device.

Claims 2 and 3 (Canceled)

Claim 4 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7.

Claim 5 (Canceled)

Claim 6 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 7 (Canceled)

Claim 8 (Currently Amended): A polarizing plate in a display device, having a high transmittance and matt property, comprising a polarizing layer and two protective films thereon, wherein at least one of the protective films is ~~the~~ a film having a high transmittance and matt property, ~~according to any one of claims 1, 4 or 6,~~ and wherein a matted layer is disposed at the opposite side to the polarizing layer, wherein:

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μ m that is

larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/m², and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/m², and wherein the particles are

monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are

monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 9 (Currently Amended): A liquid crystal display device, comprising the film having a high transmittance and matt property ~~according to any one of claims 1, 4 or 6,~~
wherein:

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure,

wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/m², and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μ m that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the

particles is in a range of from 100 to 5000 particles/m², and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 10 (Currently Amended): A liquid crystal display device, comprising two polarizing plates provided on both sides of a liquid crystal cell, wherein the polarizing plate provided at the back light side is ~~the~~ a polarizing plate having a high transmittance and matt property according to claim 8, the matted layer being disposed toward the back light side, wherein the polarizing plate having a high transmittance and matt property comprises a

polarizing layer and two protective films thereon, wherein at least one of the protective films is a film having a high transmittance and matt property, wherein a matted layer is disposed at the opposite side to the polarizing layer, wherein:

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7; or

the film having a high transmittance and matt property comprises, on a transparent support,

(a) a hard coat layer comprising a cross-linked binder polymer and particles incorporated therein, wherein the particles have a particle size of from 1.0 to 10 μm that is larger than the thickness of the hard coat layer thereby providing a concavo-convex structure, wherein said particles are set in contact with the transparent support, wherein a density of the particles is in a range of from 100 to 5000 particles/ m^2 , and wherein the particles are monodispersed transparent fine particles having a particle size distribution of 0.2 or less in terms of coefficient of variation, and

(b) a low-refractive-index layer having a refractive index of 1.45 or less and a coefficient of kinetic friction of 0.2 or less, wherein the low-refractive-index layer covers said hard coat layer so as to maintain said concavo-convex structure formed by said particles incorporated in the hard coat layer, and wherein said low-refractive-index layer comprises a fluorine-containing macromolecular compound that is cross-linked by heat or ionization radiation,

wherein the film shows a haze value of 1.0 % or more, and a total transmittance of light of 93.5 % or more,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the film is contacted with a smooth surface of a layer in a display device,

wherein the particles are monodispersed transparent fine particles formed from a resin having a Moh's scale of hardness of less than 7, and wherein said low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 11 (Canceled)

Claim 12 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein an average particle diameter of the particles is larger than the thickness of the hard coat layer by 0.5 to 5.0 μ m.

Claim 13 (Canceled)

Claim 14 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the density of the particles is in a range of 200 to 2000 particles/m².

Claim 15 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein the low-refractive-index layer has a coefficient of kinetic friction of 0.15 or less.

Claim 16 (Canceled)

Claim 17 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein said film is provided on at least one side of a polarizing layer to form a polarizing plate of the display device, and wherein the concavo-convex structure of a surface of the film is disposed at the side opposite to the polarizing layer,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matt property of the film, when the concavo-convex structure of a surface of the polarizing plate is brought into contact with a smooth surface of a layer of the display device.

Claim 18 (Previously Presented): The film in a display device, having a high transmittance and matt property according to claim 1, wherein said film is provided on at least one side of a polarizing layer to form a polarizing plate of the display device, and wherein the concavo-convex structure of a surface of the film is disposed at the side opposite to the polarizing layer,

wherein said polarizing plate is arranged in the display device such that the concavo-convex structure is disposed toward a back light side, and the polarizing plate is located next to a light tuning film layer, without being bonded to the light tuning film layer, with a slight gap existing therebetween such that the concavo-convex structure occasionally contacts a smooth surface of the light tuning film layer during operation of the display device,

whereby occurrence of non-uniformity of brightness due to light interference is prevented by virtue of the high transmittance and matter property of the film, when the concavo-convex structure of a surface of the polarizing plate is brought into contact with the smooth surface of the light tuning film layer that is elongated by heating during operation of the display device.